PROCEEDINGS

OF THE

CALIFORNIA ACADEMY OF SCIENCES

FOURTH SERIES

VOL. XIII, No. 21, pp. 333-339. NOVEMBER 29, 1924

XXI[1]

EXPEDITION OF THE CALIFORNIA ACADEMY OF SCIENCES TO THE GULF OF CALIFORNIA IN 1921[2]

THE BEES (III)

BY

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ANDRENIDÆ

Subfamily HALICTINÆ

The species of Halictus and Augochlora in the collection show a mixture of tropical and southwestern United States types. *Augochlora (Odontochlora) azteca* is a tropical species, while *A. pomoniella* was described from southern California, and is allied to species of the United States. *Halictus pseudopectoralis* was described from the tropical lowlands of Vera Cruz, but *H. microlepoides* was known from the Organ Mountains in southern New Mexico. *H. capitosus* is a species of the United States, but the tropical *H. townsendi* Ckll. is hardly more than a race. *Halictus desertus* Smith, a black species originally described from Oaxaca, was recorded by Fox from

[1] No. 33 of the Gulf Expedition papers.

[2] A map showing all the islands, etc., visited by this Expedition will be found in Vol. XII, No. 6, of these Proceedings, copies of which can be supplied at 50 cents.

Lower Purisima, Lower California, but was not obtained by Mr. Van Duzee. For notes on Smith's type, see Trans. Amer. Ent. Soc., XXXI, p. 353.

Halictus Latreille

The species mentioned in this paper may be separated by the following key:

Species entirely black 1
Species with at least the head and thorax metallic (Chloralictus) 4
1. Males, apparently punctureless; disk of propodeum polished; flagellum testaceous beneath; knees and tarsi rufo-testaceous ..... *chionocephalus*, n. sp.
—. Females 2
2. Large, 9-10 mm. long; cheeks armed ..... *capitosus* Smith
—. Smaller; cheeks unarmed 3
3. Tegulæ black, punctured on inner margin; stigma and nervures dark; vertex closely punctured; head narrower ..... *pseudopectoralis* Cockerell
—. Tegulæ not punctured; tegulæ, stigma and nervures pale testaceous; vertex without punctures; head broader ..... *vanduzeei*, n. sp.
4. Females 5
—. Males 7
5. Abdomen metallic, color of thorax; disk of propodeum rather weakly reticulated ..... *microlepoides* Ellis
—. Abdomen brown; disk of propodeum more strongly sculptured .. 6
6. Tegulæ punctured; mesothorax granular, finely punctured ..... *tegulariformis* Crawford
—. Tegulæ not punctured; mesothorax shining, coarsely punctured ..... *perdifficilis* Cockerell
7. Tegulæ punctured; mesothorax strongly punctured; abdomen dark brown ..... *tegulariformis* Crawford
—. Tegulæ not punctured; mesothorax more weakly punctured; abdomen green ..... *microlepoides* Ellis

108. **Halictus vanduzeei** Sandhouse & Cockerell, new species

Female: About 6 mm. long; black; pubescence white.

Head ordinary; facial quadrangle longer than broad; inner orbits converging below; antennæ black, the flagellum brownish beneath; entire face polished, the only punctures piliferous; sides of face and cheeks densely clothed with subappressed hairs; clypeus with a few coarse punctures, anterior margin fringed with yellowish hairs; mandibles reddish at the base, dark at the apex. Mesothorax, mesopleuræ and scutellum

polished, with sparse piliferous punctures; tubercles with a yellowish spot; postscutellum covered with dense appressed hairs; disk of propodeum subcrescentic, striæ at sides radiating, on median portion irregularly anastomosing; apex of disk polished; tegulæ honey color, impunctate. Wings clear; anterior wing about 4 mm. long; stigma and nervures honey color; second cubital cell contracted almost one-half above, receiving the first recurrent nervure very near the apex; third cubital at least twice as long as second on marginal. Legs black, with dense white hairs, except on the inner sides of the tarsi where it is yellowish; hind spur pectinate with four teeth. Abdomen obovate, shining, impunctate; pubescence sparse, largely confined to the lateral bases of segments, but not in distinct clearly defined patches; apical margins of segments brownish.

Apparently closest to *pectoraloides* Cockerell, from which it differs by the paler stigma and tegulæ; disk of propodeum shorter, polished at the apex; bases of abdominal segments two and three without dense white patches of hair; cheeks with dense subappressed pubescence.

Habitat: Las Animas Bay, Lower California, May 8; La Paz, Lower California, June 5; Angeles Bay, Lower California, June 26. (E. P. Van Duzee), Six specimens.

Type: Female, No. 1545, Mus. Calif. Acad. Sci., collected by E. P. Van Duzee, June 5, 1921, at **La Paz, Lower California.**

109. **Halictus chionocephalus** Sandhouse & Cockerell, new species

Male: About 5 mm. long; black; appearing punctureless under a lens, but under the microscope a few fine punctures are visible; pubescence white.

Head subcircular; facial quadrangle as broad as long; face and cheeks covered with dense appressed, beautifully plumose hairs; cheeks somewhat angulate below; flagellum brown, yellow-testaceous beneath; second and third joints of antennæ of about equal length; mandibles long and slender, the bases yellow, becoming red at the apex. Thorax with moderately dense pubescence; tubercles with a yellowish spot; disk of propodeum polished, without sculpturing; truncation well defined laterally; tegulæ honey color, impunctate. Wings clear; stigma and nervures honey color; anterior wing about 3.2 mm. long; second cubital cell higher than broad, contracted above, receiving the first recurrent nervure

very near the apex; third cubital at least twice as long as second on marginal. Legs black; knees and tips of tibiæ rufo-testaceous; tarsi testaceous. Abdomen shining, impunctate, sparsely pubescent; apical margins of segments brownish.

This species superficially resembles *H. vanduzeei,* and from the general resemblance might be considered to be the male of that species, but the sculpturing of the disk of the propodeum is quite distinct.

Readily distinguished from all species known to the writers by the polished body, without evident punctation, or sculpturing on the disk of the propodeum.

Type: Male, No. 1546, Mus. Calif. Acad. Sci., collected by E. P. Van Duzee, May 20, 1921, at **Loreto, Lower California.** One cotype from Animas Bay, Lower California, E. P. Van Duzee, May 8.

110. **Halictus microlepoides** Ellis

Male: About 4.5-5 mm. long; olive green; pubescence white, moderately dense.

Head ordinary; inner orbits converging below; antennæ brown, the flagellum yellow-testaceous beneath; second and third joints of antennæ of about equal length; vertex and front indistinctly punctured; clypeus and supraclypeal area shining, with a few coarse punctures; mandibles black. Mesothorax and scutellum shining, with moderately coarse punctures about twice the diameter of a puncture apart; mesopleuræ punctured; disk of propodeum sub-crescentic, shining, with a few striæ on the base, apex of disk polished; sides of propodeum punctured; truncation well defined laterally; tegulæ testaceous, impunctate. Wings clear; anterior wing 3.4 mm. long; stigma and nervures pale testaceous; third cubital cell about one and one-half times as long as second on marginal; second cubital cell receiving first recurrent nervure at the extreme apex. Legs black, except the knees, tips of tibiæ and tarsi which are red-testaceous. Abdomen very finely punctured; punctureless apical margins of segments narrow, dark testaceous.

In one of the specimens examined the left wing had only two cubital cells, while in the right wing the second transverso-cubital nervure did not meet the marginal or cubital nervures.

These specimens were taken from the same localities as female specimens of *microlepoides* and were found to resemble them very closely, except for sexual differences.

In an unpublished key of North American species of Halictus (Chloralictus) it runs to *albohirtus* Crawford, from which it differs by the green—not at all bluish—color; the more weakly punctured mesothorax, and disk of propodeum with sparser striæ.

Habitat: Tepoca Bay, Sonora, Mexico, April 25; San Lorenzo Island, May 9; Tortuga Island, May 11; San Esteban Island, April 19; Loreto, Lower California, May 20, (E. P. Van Duzee). Eight specimens.

The following records of specimens, taken by Mr. Van Duzee, are new:

111. **Halictus capitosus** Smith

Guaymas, April 8-11, 9 females;
San Nicolas Bay, May 16, 1 female.

112. **Halictus microlepoides** Ellis

Guaymas, April 7, 4 females;
Angeles Bay, May 5-7, 7 females;
Pond Island Bay, Angel de la Guarda Island, June 20, 1 female;
Willard's Point Bay, Tiburon Island, July 3, 3 females;
Freshwater Bay, Tiburon Island, April 25, 1 female;
Gonzales Bay, April 29, 2 females;
La Paz, June 3-5, 3 females;
San Evaristo, June 10, 1 female.

113. **Halictus perdifficilis** Cockerell

Guaymas, April 8, 1 female.

114. **Halictus tegulariformis** Crawford

Monserrate Island, June 23, 1 female;
La Paz, June 3, 3 males;
Mulegé, May 14, 1 male;
Gonzales Bay, April 29, 1 female;
Agua Verde, May 26, 2 females.
Originally described from Ormsby County, Nevada.

115. **Halictus pseudopectoralis** Cockerell

La Paz, June 4, 2 females.

Augochlora Smith

The species mentioned in this paper may be separated by the following key:

Females (with apical margins of abdominal segments black)..... 1
Males 2

1. First abdominal segment with a ventral dentiform process; first dorsal segment with close, strong punctures; disk of propodeum with radiating striæ *(Odontochlora)..azteca* (Vachal)
—. Characters as above, but the disk of propodeum with transverse striæ.....*azteca transversalis,* new variety
—. First abdominal segment without such a ventral process; first dorsal segment without such strong punctures..... ..... *pomoniella* Cockerell

2. Margin of clypeus black, strongly truncate; disk of propodeum plicate; sides of propodeum with coarse punctures extending to the margin of the disk; first dorsal abdominal segment strongly punctured; flagellum obscure reddish beneath..... .....*azteca* (Vachal)
—. Margin of clypeus yellow, gently rounded; disk of propodeum with irregularly anastomosing rugæ; sides of propodeum weakly punctured; first dorsal abdominal segment more weakly punctured; flagellum testaceous beneath..*pomoniella* Cockerell

116. **Augochlora azteca transversalis** Sandhouse & Cockerell, new variety

Female: Agrees with *A. azteca* (Vach.) in every respect excepting the sculpturing of the disk of the propodeum (fig. 1). In *azteca* the disk is covered with fine radiating striæ (fig. 2), while in this specimen the striæ are largely transverse. Intermediate specimens were also found—that is, with the striæ on the sides radiating, and those on the median portion irregularly transverse. The accompanying figures show the extreme types; Vachal's original specimen was somewhat intermediate. This variation far transcends what have ordinarily been considered specific limits in this genus, and is certainly most unusual, but our present judgment is that we have only one species before us. Described from the unique type.

Type: Female, No. 1547, Mus. Calif. Acad. Sci., collected by E. P. Van Duzee, June 5, 1921, at **La Paz, Lower California.**

The following records of specimens, taken by Mr. Van Duzee, are new:

117. **Augochlora azteca** (Vachal)

Guadalupe Point, Concepcion Bay, June 17, 2 females, 7 males;
San Nicolas Bay, May 16, 1 male;
Mulegé, May 14, 1 male and 1 female;
La Paz, June 3-5, 4 females.

118. **Augochlora pomoniella** Cockerell

Guaymas, April 10-11, 2 females;
La Paz, June 5, 1 female;
Concepcion Bay, June 17, 1 male;
Tiburon Island, April 23, July 3, 2 females and 1 male;
San Lorenzo Island, May 9, 1 female.

Figure 1.

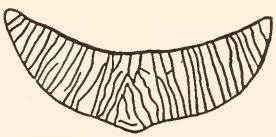

Figure 2.

BASAL AREA OF PROPODEUM.

Fig. 1. *Augochlora azteca transversalis.*
Fig. 2. *Augochlora azteca.*